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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,081	08/06/2001	Scott J.F. Zogg	00CR156/KE	1496

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Kyle Eppele
Rockwell Collins, Inc.
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Cedar Rapids, IA 52498

EXAMINER

MOORE JR, MICHAEL J

ART UNIT	PAPER NUMBER
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2616

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,081

Applicant(s)	
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ZOGG ET AL.

Examiner

Michael J. Moore, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 November 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-12,14 and 16-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-12,14 and 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The declaration filed on 11/16/06 under 37 CFR 1.131 is sufficient to overcome the *Krishnarajah et al.* (U.S. 2003/0081592) reference.
2. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

Claim Objections

3. Claims **10 and 14** are objected to because of the following informalities:

Regarding claim **10**, an objection is made to the use of the phrase "capable of" on line 3 after the word "network" and on line 4 after the word "link". This phrase constitutes optional language that does not further limit this claim (See MPEP 2106, II, C).

Regarding claim **14**, on line 4, the word "the" before the word "receiving" should be "a".

Regarding the above objections, there is some confusion as Applicant addressed these objections in the previous response. However, the current listing of claims do not include the previous amendments made to claims **10 and 14** to obviate these objections.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims **1, 3-8, 10-12, 14, and 17-21** are rejected under 35 U.S.C. 102(e) as being anticipated by Sinha et al. (U.S. 6,292,917) (hereinafter “Sinha”). *Sinha* teaches all of the limitations of the specified claims with the reasoning that follows.

Regarding claim **1**, “a method for transmitting a file stream using quality of service capable links” is anticipated by the unequal error protection transmission method shown in Figure 5 and spoken of on column 7, lines 1-20.

“Identifying important bits and less important bits within the file stream, the important bits being those of which corruption will disrupt an entire frame of the file stream” is anticipated by the separation of bits into n classes (important and less important bits) based upon error sensitivity (impact on perceived quality) as spoken of on column 2, lines 60-64.

“Negotiating quality of service parameters for at least two streams wherein each stream is associated with a detected level of interference, wherein one of the two streams has a higher quality of service level based at least in part on the detected level of interference, placing the important bits in the one of the two streams having the higher quality of service level, and placing the less important bits in a second of the at least two streams” is anticipated by the assigning of the classes of bits to n channels having interference characteristics (detected level of interference) such that the classes

of bits having the greatest error sensitivity are transmitted over the channels which are the least susceptible to interference (higher quality of service level) as spoken of on column 2, lines 64-67.

Lastly, "transmitting the at least two streams" is anticipated by the transmission of the n classes of bits over the n transmission channels 206 shown in Figure 5.

Regarding claim 3, "negotiating different quality of service parameters for each file stream, the negotiated quality of service corresponding to an identified importance of bits within the file stream" is anticipated by the assigning of the n classes of bits to n channels having interference characteristics based upon the error sensitivity (identified importance) of the classes of bits as spoken of on column 2, lines 64-67.

Regarding claim 4, "wherein the negotiated quality of service parameter is a bit error rate" is anticipated by the error sensitivity of classes of bits spoken of on column 2, lines 64-67.

Regarding claim 5, "wherein the steps of placing the important bits and placing less important bits do not include otherwise encoding the important bits" is anticipated by the assigning of the n classes of bits to n channels having interference characteristics based upon the error sensitivity (identified importance) of the classes of bits as spoken of on column 2, lines 64-67.

Regarding claim 6, "wherein lower layers in a communications stack within a transmitting device perform error detection and correction encoding on the file streams according to the negotiated quality of service" is anticipated by the channel coding and

interleaving performed on the n classified bit streams as shown in Figure 5 and spoken of on column 7, lines 9-14.

Regarding claim 7, "transmitting the at least two streams over a quality of service capable transmission link" is anticipated by the transmission of the n classes of bits over the n transmission channels 206 shown in Figure 5.

Regarding claim 8, "wherein the at least two streams are transmitted simultaneously over the quality of service capable transmission link" is anticipated by the transmission of the n classes of bits over the n transmission channels 206 shown in Figure 5.

Regarding claim 10, "a system for transmitting compressed data" is anticipated by the unequal error protection system 200 shown in Figure 5.

"A network capable of supporting quality of service negotiations" is anticipated by the transmitter 202 and receiver 204 (network) of Figure 5.

"A link capable of supporting quality of service channels, wherein each service channel is associated with a detected level of interference" is anticipated by the transmitter 202 connected (link) to receiver 204 via n communication channels 206 having interference characteristics (detected level of interference) as shown in Figure 5.

Lastly, "a software component for negotiating quality of service parameters with the network, the software component being located above a transport layer of the network, the software component configured for identifying important bits within a file stream and separating the important bits that must be correctly received by the receiving device for a successful transmission and less important bits in two separate

file streams having different quality of service parameters” is anticipated by the classifier 212 (component) of Figure 5 that converts packets into separate bit streams corresponding to n different classes (different QoS) of information based upon error sensitivity (importance) spoken of on column 7, lines 1-9, as well as column 7, lines 47-57, which states that the classifier 212 may be implemented as one or more software programs executed in a processor.

Regarding claim **11**, “wherein the network is a wireless network” is anticipated by the transmitter 202 and receiver 204 of Figure 5, as well as column 3, lines 63-67, which state support of cellular, satellite, and other wireless communication.

Regarding claim **12**, “wherein the software component is a software plugin applied to existing compiled software” is anticipated by column 7, lines 47-57, which states that the classifier 212 may be implemented as one or more software programs executed in a processor.

Regarding claim **14**, “a method for transmitting and receiving compressed data” is anticipated by the unequal error protection transmission method shown in Figure 5 and spoken of on column 7, lines 1-20.

“Identifying gradations of importance of bits within a file stream by identifying bits that must be correctly received by the receiving device for a successful transmission and identifying bits to be discarded or transmitted via lossy compression techniques without detectable signal degradation” and “associating bits within the file stream with the identified gradations of importance such that important bits and less important bits are identified” is anticipated by the separation of bits into n classes (important and less

important bits) based upon error sensitivity (impact on successful transmission) as spoken of on column 2, lines 60-64.

“Negotiating quality of service parameters for each of a plurality of file streams, wherein each file stream is associated with a detected level of interference, the plurality of file streams equal to a number of gradations of importance”, “separating important bits into a first of the plurality of file streams having a lower detected level of interference based on the negotiated quality of service”, and “separating less important bits into remaining file streams according to their respective gradations of importance” is anticipated by the assigning of the classes of bits (having gradations of importance) to n channels having interference characteristics (detected level of interference) such that the classes of bits having the greatest error sensitivity (importance) are transmitted over the channels which are the least susceptible to interference (lower detected level of interference) as spoken of on column 2, lines 64-67.

“Transmitting the file streams to a receiving device” is anticipated by the transmission between transmitter 202 and receiver 204 via n channels 206 shown in Figure 5.

“Synchronizing the file streams received by the receiving device” is anticipated by the deinterleaving and decoding performed within receiver 204 of Figure 5 upon reception of signals from the transmission channels 206 as spoken of on column 7, lines 31-38.

“Combining the received file streams into a single stream” is anticipated by the declassifier 224 of Figure 5 that reconstructs (combines into single stream) packets from the bit streams as spoken of on column 7, lines 38-40.

Lastly, “passing the single stream to a device for viewing” is anticipated by the decoding of the audio packets (single stream) by decoder 226 (device) into the original audio signal, as well as column 3, lines 27-29, which states that the system of Figure 5 can be applied to video and image information as well.

Regarding claim **17**, “negotiating a bit error rate” is anticipated by the error sensitivity of classes of bits spoken of on column 2, lines 64-67.

Regarding claim **18**, “negotiating a latency rate and a consistent throughput rate” is anticipated by the error sensitivity of classes of bits spoken of on column 2, lines 64-67.

Regarding claim **19**, “wherein separating important bits and separating less important bits does not include encoding the important bits or the less important bits” is anticipated by the assigning of the n classes of bits to n channels having interference characteristics based upon the error sensitivity (identified importance) of the classes of bits as spoken of on column 2, lines 64-67.

Lastly, “wherein lower layers of a communication stack on the network perform error detection and correction encoding according to the negotiated quality of service parameters” is anticipated by the channel coding and interleaving performed on the n classified bit streams as shown in Figure 5 and spoken of on column 7, lines 9-14.

Regarding claim **20**, “passing the file streams down a communications stack on the network, wherein each layer of the communications stack adds error correction and detection coding consistent with the negotiated quality of service parameters” is anticipated by the channel coding and interleaving performed on the *n* classified bit streams as shown in Figure 5 and spoken of on column 7, lines 9-14.

Lastly, “transmitting the streams over a quality of service capable link” is anticipated by the transmission of the *n* classes of bits over the *n* transmission channels 206 shown in Figure 5.

Regarding claim **21**, “wherein synchronizing and combining the received file streams is performed by an embedded component on the receiving device” is anticipated by the deinterleavers 220, decoders 222, and declassifier 224 (embedded components) shown within the receiver 204 of Figure 5.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims **9 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Sinha et al. (U.S. 6,292,917) (hereinafter "Sinha") in view of Applicant's Admitted Prior Art in the Background Section of the Specification.

Regarding claim **9**, *Sinha* teaches the method of claim **1**. *Sinha* does not explicitly teach where a received signal quality is improved as much as 2dB to 5dB on noisy transmission channels without causing additional delays in the transmission.

However, Applicant admits on page 6, paragraph 24, of the Background Section of the Specification, how soft decisions in the lower layers of the communication stack are known to provide 2dB to 5dB improvement in signal quality.

Therefore, it would have been obvious to someone skilled in the art to use the packet classification and unequal error protection teachings of *Sinha* in order to improve the signal quality by 2dB to 5dB.

Regarding claim **16**, *Sinha* teaches the method of claim **14**. *Sinha* does not explicitly teach wherein the identified bits that may be discarded include sounds beyond the range of human hearing or sounds overwhelmed by other sounds for audio transmissions, white lines or extremely fine detail within an image, white lines between lines of text on a page, and identically shaded pixels within an image.

However, Applicant admits on page 5, paragraphs 20 and 21, of the Background Section of the Specification, how white lines between lines of text on a page, periods of

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silence in a telephone signal, white space or identically shaded pixels in a picture, etc. is redundant information removable through compression.

Therefore, it would have been obvious to someone skilled in the art to use the teachings of *Sinha* to identify the above sounds and white lines and identically shaded pixels as less important bits of information in order to allow more important bits of information to be transmitted more efficiently.

Response to Arguments

9. Applicant's arguments with respect to claims **1, 10, and 14** have been considered but are moot in view of the new ground(s) of rejection provided above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Moore, Jr. whose telephone number is (571) 272-3168. The examiner can normally be reached on Monday-Friday (8:00am - 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached at (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Michael J. Moore, Jr.
Examiner
Art Unit 2616

mjm MM

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